Terminating the PSTN: The Clear, Cloudy and Obscure Issues

A Presentation to the
FCC Technologies Transitions Policy Task Force
March 15, 2013

Rob Frieden, Pioneers Chair and Professor of Telecommunications and Law
Penn State University
rmf5@psu.edu
Web site : http://www.personal.psu.edu/faculty/r/m/rmf5/ (contains this presentation)
Blog site: http://telefrieden.blogspot.com/

Objectives of this Unsponsored Presentation

- Identify the costs and benefits resulting from incumbent carrier discontinuation of common carrier, wireline voice telephone service.
- Use case studies of recent carrier interconnection and consumer access disputes to examine whether and how private carriers using marketplace driven negotiations and commercial incentives can achieve timely and reasonable outcomes.
- Identify the clearly identifiable, somewhat understandable and downright obscure issues raised by the submissions received by the Commission.

The Benefits and Burdens of Common Carriage

- Legacy telephone companies seek a long sought goal: liberation from the common carrier requirements of nondiscrimination and transparency plus the duty to serve as the carrier of last resort. This confers opportunities for greater efficiency, operational synergies and the ability to concentrate on providing higher margin services, e.g., wireless and broadband.

- By seeking authority to discontinue conventional PSTN services, incumbent carriers that continue to offer voice telephone services will seek to qualify as private carriers providing an information service. In their worst case scenario, unclassified Voice over the Internet Protocol ("VoIP") service regulation would apply.

- Existing private carriers do not receive universal service funding, but their future broadband expansion efforts might qualify.

- Other possibly lost benefits: preferred or free access to rights of way and spectrum; favorable tax treatment; leadership in standard setting and policy making; vertical integration synergies, the right to demand interconnection with other carriers.

Worst Case Scenario: Many Legacy Carrier Burdens Not Avoided.

If incumbents become reclassified as VoIP carriers, they will have to comply with several costly regulatory obligations:

to collect universal service funding possibly without opportunities to receive any subsidy; to provide subscriber access to emergency 911 service; to cooperate with law enforcement authorities; to incorporate the technical accommodations for persons with disabilities, such as deaf callers; to allow subscribers to keep their existing telephone numbers when switching services; and to compile and report service outages, etc. to the FCC.

It will be difficult to reclassify VoIP as a telecommunications service, because this primarily software enhancement rides on top of the telecommunications bit transmission function the Commission deems an information service.

Best Case Scenario: The Information Service Deregulated Safe Harbor

If incumbents become reclassified as information service providers, they will qualify for deregulation, possibly subject to a questionable FCC ancillary jurisdiction claim.

As former lead carriers, incumbents probably will not have problems in the migration from compulsory common carrier interconnection to voluntary models; possibility exist for smaller and rural carriers to have a harder time, possibly having to accept assymetrical settlement rates.

Internet interconnection models, e.g., peering and transit are likely to replace telecom models, e.g., access charges, bill and keep; meet point billing.

Incumbents may even be able to leverage access to their networks for preferential terms; however they risk triggering more disputes about interconnection terms and conditions as well as issues about what end user subscriptions guarantee.

Open Internet/Network Neutrality questions arise even as the Commission will have less direct statutory authority to remedy anticompetitive behavior. Freed of tariffing requirements, private carriers may impose surcharges for “toll grade” QOS; “toll free” data access and better than best efforts routing.

Case Studies in Balkanization and Challenges to Ubiquitous Service

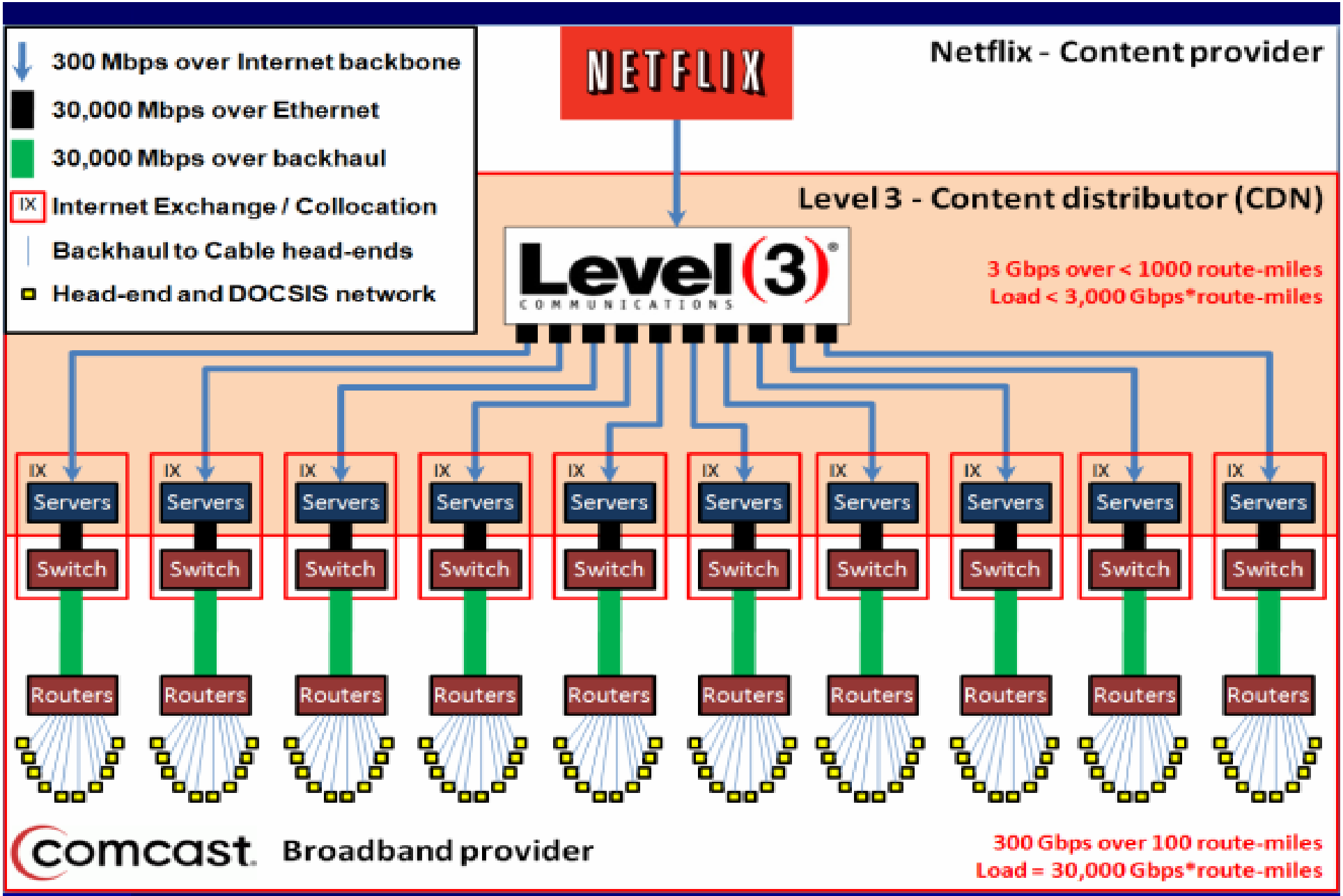
Level 3-Comcast Dispute

In late 2010 Comcast imposed a traffic delivery surcharge when Level 3 became the primary CDN for Netflix.

Level 3 characterized the surcharge as a discriminatory toll while Comcast framed the matter as a commercial peering dispute.

Comcast is correct if one narrowly focuses on downstream traffic termination.

But more broadly the dispute raises questions about the scope of duties Comcast owes its broadband subscribers and whether Level 3 is entitled to a good faith effort to abate the traffic imbalances with upstream traffic.

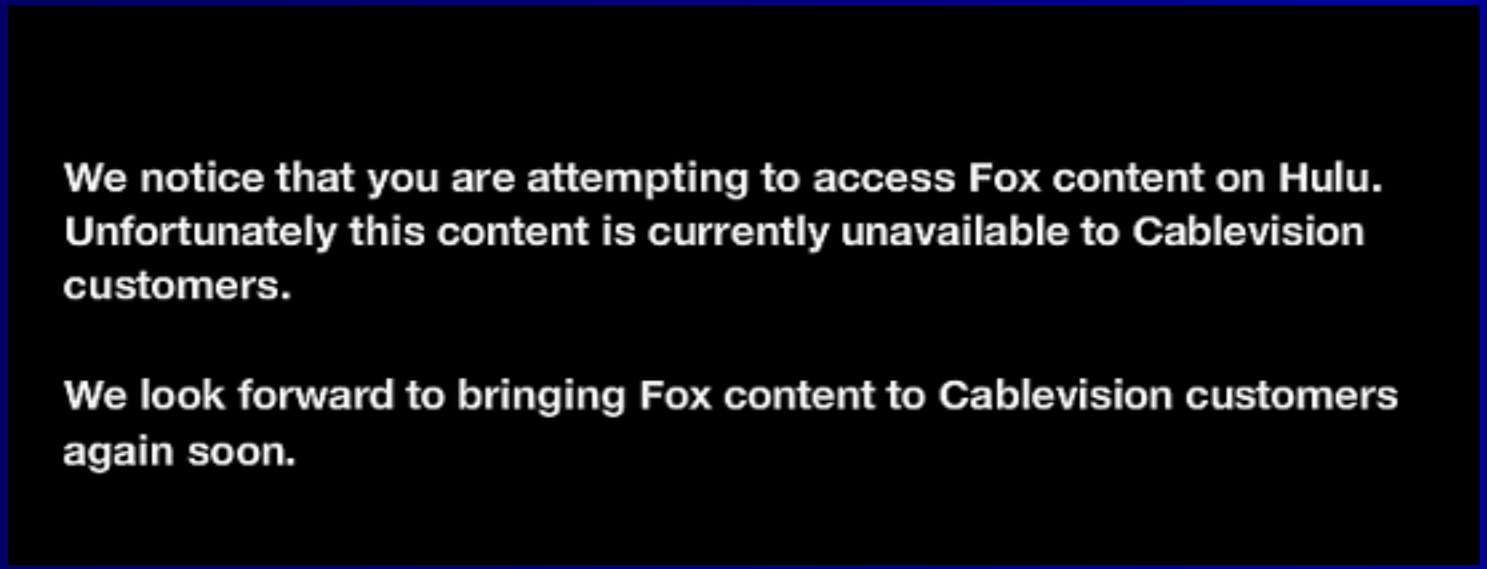


Source: George Ou, Digital Society, http://www.digitalsociety.org/2010/12/division-of-labor-between-broadband-and-cdn/

Case Studies in Balkanization and Challenges to Ubiquitous Service

Cablevision-Fox Dispute

For added leverage in a content retransmission dispute Fox used deep packet inspection to identify Cablevision subscribers seeking access to Fox content available to anyone via the Hulu intermediary web site. Fox denied Cablevision subscribers access and instead sent this message:



Case Studies in Balkanization and Challenges to Ubiquitous Service

Google Voice

AT&T challenged Google's decision not to provide access to all telephone lines, including ones in rural areas whose termination charges vastly exceeded standard rates, i.e., "traffic pumpers" with inducements such as "free" conference calling.

Apple temporarily denied Google shelf space at the iPhone Apps Store triggering an FCC Wireline Competition Bureau query.

In both instances the matter got resolved, or at least did not trigger substantial regulatory intervention. iPhone users now can access Google Voice.

Greater possibility of de-peering and refusal to interconnect probably not limited to rural Iowa operators.

The FCC has Limited Jurisdiction to Remedy Anticompetitive Practices or Adverse Impact on Longstanding Public Interest Goals

Regardless whether future voice telephone services are classified as VoIP or information services, the FCC will have no direct statutory authority and questionable ancillary jurisdiction even to remedy disputes. Can the FCC assert ancillary jurisdiction for a Title II service that no longer exists?

VoIP regulation was based on a functional equivalency argument which will have less plausibility if wireline POTS disappears.

Absent new legislation the FCC will not have a direct statutory link to justify its possibly necessary intervention if carrier interconnection and consumer access disputes become protracted.

VoIP may continue to evidence distance insensitivity and/or carriers may continue to cost average. If not, the cost of service in rural areas may rise defeating universal service goals.

The FCC may continue to invoke promotional obligations in the Telecommunications Act of 1996 , e.g., Sec. 706. But the *Comcast* case (no statutory support for open Internet initiatives) casts doubt whether the FCC can intervene even if empirical evidence shows consumer harms. Unclear how far the Commission can go with "quasi-common carrier" duties affirmed in the recent data roaming case.

Ironically, deregulation may eventually trigger statutory re-regulation should consumers/voters complain vigorously.

The Easy to See Issues

- Circuit-switched PSTN nearing end of life, especially the switches and personnel maintaining them.
- PSTN termination does not discount the duct work, rights of ways and even the value of the copper conduit.
- The FCC has a longstanding commitment to avoid “flash cut” technology transitions. Incumbent carriers should support a reasonably long transition from legacy to next generation network technologies, just as television broadcasters simulcasted in both analog and digital formats.
- Consumers don’t appreciate having to bear device and other transition costs; cf. the availability of two $40 coupons for digital to analog TV converters with Comcast’s migration from free converters to monthly rentals quickly after receiving authority to digitize and encrypt the basic tier.
- Incumbent carriers will leverage NGN investment and “substantial” consumer migration (30% residential; 10% business) as “proof”of PSTN obsolescence and robust/sustainable competition.

The Somewhat Unclear Issues

- IP-centric voice communications can qualify for more than one regulatory classification, even though the Commission prefers a single omnibus classification e.g., all broadband access types = information services; incumbents will seek the **single** least burdensome category.
- The continuing role of the rate payer financed copper plant; no one expects fiber to replace copper anytime soon, e.g., U-verse and Ethernet over copper innovations.
- The costs avoided from TDM plant retirement; the profitability of legacy vs. replacement services.
- The persuasiveness of incumbent arguments about adequacy and sustainability of competition vs. the reality that replacement services may impose higher rates, metering, caps, lower QOS, lost geographical coverage, new device requirements and new use procedures.
- Whether state jurisdiction is preemptable (see discussion of legal issues that follow).
- The viability of commercially driven interconnection negotiations in lieu of tariffs and a duty to deal

The Obscure But Essential Issues

- Eliminating the extensive list of unnecessary "regulatory underbrush" will gut many Title II requirements not permissibly streamlined by Sec. 160; is AT&T leveraging job creating investment for job killing NGN investment?
- Sec. 214 applications to discontinue service are still required even if replacement options are available. Such availability supports the merits of the petition, not whether an application had to be submitted.
- The potential for major consumer pushback when the prospect for greater cost, metering, less reliability from AC-powered plant, etc. become apparent.
- Telco employee and union response to the potential for massive reduction in personnel.
- State PUC response to the potential for federal preemption despite ample precedent for shared jurisdiction, e.g., La. PSC v. FCC, 476 U.S. 355 (1986).
- Incumbent "cake and eat it too" demands and litigation: complete or substantial deregulation without relinquishing any of the upside common carrier benefits already acquired, e.g., free spectrum and ROWs.

Legal Issues

- Much of the AT&T/Verizon et al deregulatory wish list calls into question the general applicability of Title II and the scope of permissible forbearance (Sec. 160). If the FCC does not acquiesce, expect litigation whether the Commission has direct or ancillary jurisdiction going forward.

- Can incumbent carriers wrap "enough" interstate/information services to (in the Commission's lexicon) contaminate the common carrier telecommunications service function?

- FCC jurisdiction to impose duties to deal/interconnection on carriers using facilities to provide convergent telecommunications, telecommunications services and information services. The Commission has to accept the existence of a single carrier triggering multiple regulatory categories.

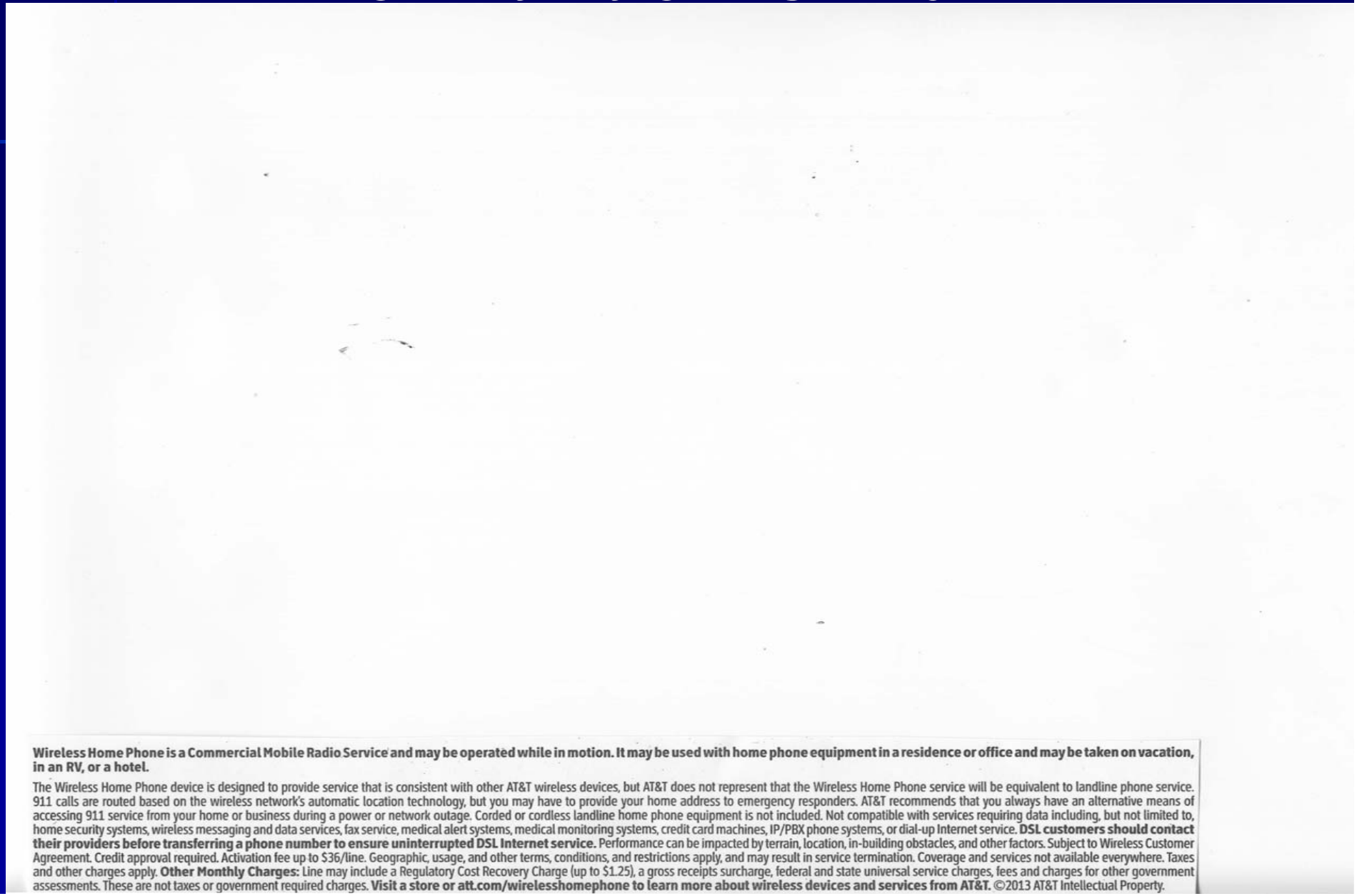
- Viability of the VoIP regulatory model, both in terms of the having no PSTN with which to interconnect, the FCC's ability to preempt the states and the growing list of regulatory (quasi-common carrier) burdens.

- Qualification to tap into USF not as telecommunications service providers, but as ISPs extending broadband service.

Legal Issues (cont.)

- FCC preemption of state laws/regulations including carrier of last resort and intrastate universal service funding.
- Burden of proof requirements: merely asserting that the voice telephony is contestable and competitive?
- Is the duty to file Sec. 214 service discontinuance applications eliminated when a replacement service may exist? Functional equivalency of replacement services?

Fine Print in the AT&T Ad



Wireless Home Phone is a Commercial Mobile Radio Service and may be operated while in motion. It may be used with home phone equipment in a residence or office and may be taken on vacation, in an RV, or a hotel.

The Wireless Home Phone device is designed to provide service that is consistent with other AT&T wireless devices, but AT&T does not represent that the Wireless Home Phone service will be equivalent to landline phone service. 911 calls are routed based on the wireless network's automatic location technology, but you may have to provide your home address to emergency responders. AT&T recommends that you always have an alternative means of accessing 911 service from your home or business during a power or network outage. Corded or cordless landline home phone equipment is not included. Not compatible with services requiring data including, but not limited to, home security systems, wireless messaging and data services, fax service, medical alert systems, medical monitoring systems, credit card machines, IP/PBX phone systems, or dial-up Internet service. **DSL customers should contact their providers before transferring a phone number to ensure uninterrupted DSL Internet service.** Performance can be impacted by terrain, location, in-building obstacles, and other factors. Subject to Wireless Customer Agreement. Credit approval required. Activation fee up to $36/line. Geographic, usage, and other terms, conditions, and restrictions apply, and may result in service termination. Coverage and services not available everywhere. Taxes and other charges apply. **Other Monthly Charges:** Line may include a Regulatory Cost Recovery Charge (up to $1.25), a gross receipts surcharge, federal and state universal service charges, fees and charges for other government assessments. These are not taxes or government required charges. **Visit a store or att.com/wirelesshomephone to learn more about wireless devices and services from AT&T.** ©2013 AT&T Intellectual Property.

Technical Questions

- In light of relentless complaints about spectrum scarcity by wireless carriers, can the wireless networks ramp up to accommodate the migration of the entire wireline consumer base mostly to a wireless replacement?
- Are VoIP and other PSTN replacement services as robust, redundant, user friendly and reliable as POTS?
- How important is a direct current powered PSTN that can have reliable and long lasting battery backup power?

Conclusions

In the migration from common carrier to private carriage, incumbents may have overestimated the value of deregulation vis a vis lost financial and operational benefits accruing from regulation.

Wireline carrier managers appear to assume that greater operational efficiencies (fewer personnel, less maintenance, reduced regulation, higher margins and an IP-centric wireless network) will offset any losses in universal service funding, priority access to rights of way, mandatory interconnection, tax benefits, spectrum set asides, etc.

Heretofore private carrier negotiations (peering, transit, retransmission consent) have reached closure, albeit not always on a timely basis, particularly since end users continue to pay during negotiations, e.g. cable retransmission consent. Even if consumers are technology agnostic, they will have little tolerance for any degradation in "lifeline" service.

Interconnection negotiations may bog down or harm consumers, particularly if conduit neutrality issues are triggered. Voice and data subscribers both expect their subscriptions to guarantee ubiquitous, toll grade QOS and high reliability not conditioned on multiple "commercially driven" carrier interconnection agreements.